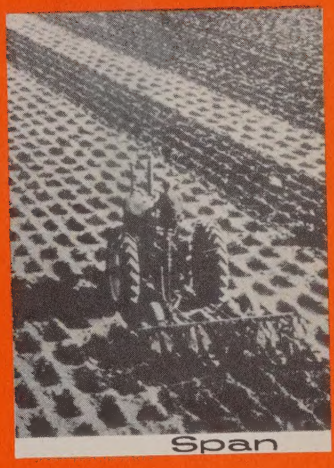
Span

INDEX 1963



7 AUG 1964

Volume 6 | Numbers 1-3 | 1963

Span

VOLUME 6 : NUMBERS 1-3

AUTHOR INDEX

Agiza, A.H. . . . 140
Allan, P. . . . 138
Bawden, F.C. . . . 88
Bogdan, A.V. . . . 158
Brown, K.F. . . . 98
Carr, S.J. . . . 144
Cashmore, W.H. . . . 36
Chaboussou, F. . . . 134
Cochrane, D.G. . . . 18
Davidson, H.R. . . . 59
Dodds, K.S. . . . 64
Edmunds, H. . . . 154
Golding, E.W. . . . 40
Grist, D.H. . . . 27
Gunn, D.L. . . . 130
Habashi, W. . . . 101
Hammond, Sir John . . . 11
Hartley, W. . . . 68
Haslett, A.W. . . . 34
Hills, K. Loftus . . . 161
Jones, J.K. . . . 122
Jones, K. Bryce . . . 72
Kearns, C.W. . . . 82
Kershaw, K.L. . . . 14
Nielsen, H.E. . . . 149
Ottosson, L. . . . 77
Palmby, C.D. . . . 2
Panos, D.A. . . . 30
Purseglove, J.W. . . . 126
Rushton, M.P. . . . 23
Ryder, M.L. . . . 114
Somers, E. . . . 94
Tegner, G. . . . 76
Thomsen, R. Nortoft . . . 149
Trow-Smith, R. . . . 118
Whyte, R.O. . . . 6
Zeuner, F.E. . . . 54

SUBJECT INDEX

A

Abaca, diseases of, 51 BR
Aberdeen-Angus cattle, 120
dairy shorthorn cross and progeny of, 11, 13 (fig.)
Acaricide, DDT as, 135
diazinon and parathion as, 137
use in vineyards, France, 135
Acethion, differential toxicity to fly and man, 84
Adhesion, copper dusts in monsoonal regions, 16
copper-in-oil sprays to *Hevea* canopy, 16
Aedes aegyptii, control by DDVP, 21
Aegilops spp., allied to *Triticum*, 123, 124 (fig.)
Aerial spraying, helicopter for, 15 (fig.)
rubber tree against *Phytophthora*, 14, 15 (fig.)
Aerosol, DDVP for tobacco warehouse, 20
African village, electrification, 43 (fig.)
Agra Europe, English edition, 105
Agricultural chemicals, profitable use of, 111 BR
Agricultural grasses, Dunn's guide to, 111 BR
Agricultural machinery, 15, 26, 43, 48 BR, 52 BR
implement range of the Monotractor, 148 (fig.)
testing in Britain, 36
Agricultural products, Ghana's trade in, 169 BR
surplus disposal, economics of, 3
Agriculture, 47 BR
advisory work for developing countries, 170 BR
Australian practice, 48 BR
Borgo a Mozzano experiment, Italy, 170 BR
history of animal domestication, 54, 59, 114, 118
of crop origin and evolution, 64, 68, 122, 126
population dependence on, by countries, 42
Agriculture, Fisheries and Food, Ministry of, 107 BR
Aircraft disinfestation with DDVP, 21
Akiochi disease of rice, 27
Aldrin, cocoa capsid control by, 24
sisal weevil control by, 111 BR
Alfalfa, *See* Lucerne.
Alkaloid, toxic, in *Leucaena* forage, 164
American continent, introduction of the pig into, 61
Amino-acids, in plant metabolism, 168 BR
systematic protection against fungi given by, 97
Ammonia, low temperature storage and transport, 138
production from petroleum hydrocarbons, 138
Ammonium calcium nitrate, 32
Ammonium phosphate for rice, Japan. 27
Ammonium polyphosphate, 139
Ammonium sulphate, for tropical grasses, 162
Anobium punctatum, infection of buildings by, 165
Anopheles quadrimaculatus, 20, 21
Aphid, barrier crops as protection against, 93
spraying sugar beet attacked by, 93
virus transmission by, 90, 91 (fig.)
Apical meristem, virus-free plantlets from, 91(fig.), 92
Apomictic grasses, propagation by seed, 159
Apple, hail damage, 35 (fig.)
Arabica coffee, origin and distribution of, 127
Aramite, carcinogenic properties tested, 47 BR
Arboricides, 50 BR
Argentina, lucerne acreage in, 172 BR
Aroma in food, identification of components, 75
Artificial insemination, use of beef bulls of dominant colour, 11
Attractants, olfactory and sex, to insects, 87
Auction sale, bull grading for, Virginia, 156
Aurochs as progenitor of European cattle 57 (fig.), 85
Australia, agricultural practice, 48 BR
plant introduction service, 10
poultry diseases in, 113 BR
rain-making experiments, 34
tropical legumes for pastures, 158, 159, 161
Aza-guanine, inhibitor of virus multiplication, 89
Aziridines as insect sterilisers, 86

B

Bacon, history of production of, 62
pig conformation, breeding for, 75
quality, progeny test data, 150
Bacterial leaf blight of rice, 28
Bahia grass, Pensacola variety, 159
Bakanae disease of rice, 28
Bakewell, Robert, breeding of livestock, 120
Banana, copper-in-oil ground spraying, 16
diseases of, 51 BR
evolutionary history of, 67
Banana weevil borer, 52 BR
Banding disease of sisal, 110 BR
Bark canker of rubber *(Hevea)*, 14
Barley, nutrient removal by crop, 141
origin, dispersal and domestication of, 6
progenitors of, 13, 122, 123
root system of, 110 BR
trade of the United Arab Republic, 140
Barseem *Trifolium alexandrinum*, in the U.A.R., 141, 142

Bean, origin and domestication of, 6
trade of the U.A.R., 140
Beef, eating quality and farming practice, 75
pasture improvement for production of, Queensland, 162
production from dairy cattle, 11
Beef Cattle Research Station, Front Royal, 155 (fig.)
Beef Recording Association of the United Kingdom, 154
Beefmaster cattle breed, 121
Benzene hexachloride, cocoa capsid control by, 24
Bermuda grass, 71
Bird control measures, 165
Blackwell switchgrass, growing in Texas, 68 (fig.)
Blister blight of tea, Ceylon, 132
Bloat in cattle on lucerne pasture, 172 BR
Blood groups in cattle, in tracing ancestry, 119, 121
Book reviews
Agriculture - the science and practice of farming, by Watson and More (11th rev. ed. by McMillan) 47
Alfalfa: botany, cultivation and utilisation, by Bolton, 172
Banana diseases including plantains and abaca, by Wardlaw, 51
Bibliography on rice, by the University of the Philippines, 113
Borgo a Mozzano. Technical assistance in a rural community in Italy, by Virone and Volpi, 170
Crop protection (2nd ed.) by Rose, 169
Cucurbits, by Whitaker and Davis, 51
Diseases of poultry (3rd ed.), by Hungerford, 113
Dunn's guide to farm grasses, 111
Electricity in modern farming, by Rowland, 108
Ghana agriculture, by La Anyane, 169
Great Hunger, Ireland 1845-9, The, by Woodham-Smith, 109
History of domesticated animals, by Zeuner, 166
Insect factor in wood decay, by Hickin, 112
Malaria eradication, a textbook of, by Pampana, 170
Malariology, practical, by Russell, West Manwell and Macdonald, 171
Manual of Australian agriculture, by Molinar, 48
Ministry of Agriculture, Fisheries and Food, by Winnifrith, 107
Nitrogen metabolism in plants, by McKee, 167
Pathology of trees and shrubs, with special reference to Britain, by Peace, 111
Pig, The - modern husbandry and marketing, ed. by Price, 52
Preservation of timber, by Findlay, 112
Profitable use of farm chemicals, by Laverton, 111
Prophet of the new age: the life and thought of Sir George Stapledon, F.R.S., by Waller, 106
Roots of temperate cereals (wheat, barley, oats and rye), by Troughton, 110
Seed identification manual, by Martin and Barkley, 50
Seed production of some herbage species in temperate regions, by Anslow, 50
Silent spring, by Carson, 46
Sisal, by Lock, 110
Soil and freshwater nematodes (2nd ed.) rewritten by J.B. Goodey, 171
Soil management for conservation and production, by Cook, 49
Soil organic matter, by Konova, Eng. trans. by Nowakowski and Greenwood, 109
Tropical forestry with particular reference to West Africa, by Taylor, 49
Vegetation and soils: a world picture, by Eyre, 168
Bordeaux mixture, *Phytophthora* control on *Hevea* by, 14 (fig.)
Borgo a Mozzano experiment, 170 BR
Bos primigenius, 57 (fig.), 58
Botrytis allii, 96
Botrytis fabae, germinating, 94 (fig.)
Botrytis infestans, 109 BR
Brangus cattle breed, 121
Brassica spp., hybridisation and chromosome numbers, 67
Breeding, farm animals, 11, 149
Breeding, plant, 8, 125
coconut, hybrids described, 129
pasture species, 71, 159
oil palm, 129
tree crops, 127
British standard test code for tractors, 37
Broccoli, fertilising crops for freezing, 81
Browse tree for cattle, tropical, 164
Brussels sprouts, fertilising crops for freezing, 81
Bryobia praetiosa, 134
Bud-grafting of rubber, 128
Buffel grass *(Cenchrus ciliaris)*, 160
Bull, mating beef breeds with dairy cows, 11
Bull testing station, Virginia, 154 (figs.)
Bunchy top of banana, 52 BR
Burma, *Phytophthora* on *Hevea*, in, 14
rural electrification in, 42, 43 (fig.)

C

Calcium requirement of bacon pig, 152
Calcium nitrate, production in Suez factory, 143
Calf, colour-mark indicating beef ancestry, 11, 13 (fig.)
multiple suckling of steer calves, 12
Camellia sinensis, origin and distribution, 128
Canopy density ratings in cacao, 25
Capital loans in Gezira farm scheme, 147
Captan, fat solubility and fungicidal action, 96
spore germination and, 94
Carbon dioxide, rain making with solid, 34
Carbon tetrachloride, toxicology, 47 BR
Carbophenothion as acaricide and ovicide, 136, 137 (fig.)
Carboxyesterase, organophosphate hydrolysis by, 84
Carcass quality in bacon pigs, 52 BR
feeding for, 153
progeny testing of pigs for, 150
Carcinogenic chemicals and United States law, 47 BR
Carrot, nematode damage to, 99 (fig.)
Carrying capacity of speargrass-lucerne sward, 164
Cattle, dual-purpose breeds, 11, 12
evolution and domestication of, 57(fig.),58,118,119 (figs.)
Cenchrus ciliaris, 160
Centrosema pubescens, in Queensland, 162

Cereals, ancestry of, 122
history of, 64
nitrogen fertilising and yield responses, 142
nutrients removed by crop, 141
root systems of temperate crops, 110 BR
Ceylon, coffee destroyed by rust fungus, 128, 131
electricity consumption per head, 42
Phytophthora on rubber trees in, 14
tea research at St. Coombs, 131
CeyTea, 133
Charbray cattle breed, 121
Charollais cattle, crossing with dairy breeds, 11
progenitors of, 121
Chemotherapy of virus-infected plants, 89
China, pig domestication and dispersal, 59, 61
Chissophos, nitrogen-phosphorus ratio, 27
Chitin, griseofulvin activity and, 96
Chloris gayana, 158 (fig.), 159, 162
Chlorotic streak in sugar cane, 92
Cholinesterase, inhibition by organophosphates, 82
instability of DDVP complex in tissues, 21
Chromosome changes and plant evolution, 66
Cigarette beetle, control by DDVP, 20, 22
Citrus, nematode attack, Tunisia, 100
origin and evolution, 65
quality testing, 73 (fig.)
Clean weeding, sisal plantations, 110 BR
tea estates, 133
Climax vegetation, 168 BR
Clover, experimental plots, 68 (fig.)
grass-clover mixtures for tropics, 158
history of development, 70
naturalisation of white in sub-tropics, 164
nutrients removed by crop, 141
Clover, subterranean, establishment in temperate Australia, 70
Cockroach, acethion non-toxic to, 84
injection of insecticides into individual, 86 (fig.)
sexual attractant identified, 87
Cocoa, capsid damage and control, Sierra Leone, 23 (figs.)
industry of Ghana, 169 BR
origin and development of, 127
Coconut, industry of Ghana, 169 BR
origin and breeding, 129
Coffee, history of origin and use, 127, 128
nematode attack in Colombia and Nicaragua, 100
Coffee leaf rust, 128
Collar canker of tea, 132
Colombia, crops attacked by nematodes, 100
Colour and food quality, 74
Combine harvester, N.I.A.E. standard test for, 39
'Comet' shorthorn bull, 120 (fig.)
Compressor for applying DDVP to aircraft cabin, 21
Conference, Food Supply and Nature Conservation, 164
Industrial Pest Control Association 165
Cooperative movement, Ghana, 169 BR
Copper oxychloride in oil, ground spray for *Hevea*, 16
Copper sprays against blister blight of tea, 132
Cortisium sp., 14
Cosmopolites sordidus, 52 BR
Cost, aerial spraying of *Hevea* canopy, 16, 17
Cotton, grading, Sudan, 101 (fig.)
nematode attack, Colombia, 100
nutrients removed from soil by crop, 141
origin, dispersal and domestication, 6, 125
research and development schemes, Sudan, 101, 103
Crested wheatgrass, 70
Crop protection, 52 BR, 111 BR, 169 BR
Crops, cultural and evolutionary history, 6, 65, 122
damage by hailstones, 35
growing for freezing, 77, 80
origin of annual field crops, 122
of tropical tree crops, 126
yields in the United Arab Republic, 140
Crotalaria quinquefolia, nitrogen fixation by, 28
Cucurbitaceae, botany, growing and uses, 51 BR
Cultivar, term defined, 159
role of interspecific hybridisation, 65
Cultivator, electrically driven, 43 (fig.)
Cunningham Laboratory, Brisbane, 164
Cuticle, insect, penetration by tetraethyl pyrophosphate, 83
Cuttings, virus-tree tips of infected plants, 92
Cytological evidence of crop ancestry, 122

D

Dairy cow, mating with beef bull, 11
multiple suckling of beef calves by, 12
Damping-off in forest nurseries, 112 BR
Date palm, origin and antiquity of, 65
D-D as tea soil fumigant, Ceylon, 132
DDT, detoxication in housefly tissues, 84
intoxication, causing toxin in insect blood, 85
physiological action on sensory organs, 85
red spider mite on vines sprayed with, 134,135,136,137
DDVP, insecticidal and toxicological properties, 18
Dead Sea scrolls, evidence of sheep types of ancient world, 114
De Candolle, A. on origin of crop plants, 67
Dehydration of lucerne, 172 BR
Dehydrochlorinase in DDT-resistant housefly, 84
Demeton, red spider on vines sprayed with, 134
Denmark, cattle cross, Charollais x Jersey, 12
frozen food industry, 76
pig breeding and feeding, 60, 61(fig.),149
progeny and performance testing of pigs, 150, 151
Desert Locust Control Organisation for E.Africa, 45
Desmodium uncinatum, 164,
Detoxication mechanisms in insects, 83, 84
Dialkylphosphorothioates, biological activation, 84
Diammonium phosphate, manufacture, 139
Diazinon, acaricidal action, 137
Dichlone, mode of fungicidal action, 96
Dichlorvos, 19
Dieldrin, beneficial predators destroyed by, 132
convulsant effect on nervous system, 85
formulations, 45
sisal weevil controlled by, 110 BR
Diethyl *p*-nitrophenyl phosphate as cholinesterase inhibitor, 83
Dimethyldithiocarbamates, fungus sensivity classes, 96
Dimite, DDT synergist, 84
Dinocap, fungicidal activity, 94

Distantiella theobroma, 23
Dog, history of domestication of, 54
Dothidella ulei, 14, 128
Drawbar tests for tractor performance, 38
Duroc pig, lard breed, 60, 62 (fig.)
Dust room, N.I.A.E., tractor engine test, 38 (fig.)
Dusting *Hevea* against *Phytophthora*, 15

E

East Africa, Desert Locust Control Organisation, 45
East Africa Testing Unit for agricultural machines, 37, 38
Ecology, plant, 168 BR
Economics, beef from dual-porpose breeds, 12
Phytophthora control on rubber, South India, 16, 17
rural electrification, 42
spraying farm crops, 111 BR
Eden, T., fertiliser trials, Ceylon, 131
Eelworm parasitic on tea, Ceylon, 132
Egg, colour and quality, 74
Elais guineensis, 129
Electric light, raising plants under, 43 (fig.)
Electrical Research Association field station, 43 (fig.)
Electricity, consumption in agriculture, 41, 42
consumption per head related to income, 41, 42
in farm mechanisation, 108 BR
Elm, phloem necrosis virus, 89
Emmer wheat, archaeological finds, Egypt, 124 (fig.)
Empire Cotton Growing Corporation, in Sudan, 105
Engine, performance tests at N.I.A.E., 38
Ensodil, dieldrin formulation, 45
Eotetranychus carpini vitis, 134, 135, 136
Erisiphe spp., fungicides for controlling, 94, 96
spore dehydration by fungicides, 96
Ethylene, fruit ripening effect, 74
Eudemis, spraying, field count of red spider, 136
Exobasidium vexans, 131
Export cess on tea in Ceylon, 131

F

Farm buildings, pig houses, 52 BR
Farm mechanisation, 108 BR
tractor census, 42
Farm schools in Africa, student wastage, 144
Farming practice, 48 BR
electricity in, 44, 108 BR
Farmyard manure, soil humus and, 109 BR
Fat thickness in bacon, 150, 151 (fig.)
Feed conversion efficiency as inherited character, 155
Feeding stuffs, for breeding sow, 151
mixer, N.I.A.E. test scheme for, 39
processing machinery tests, 37
Fenchlorophos in fly control, 165
Fencing, electric, 108 BR
Ferbam, fungal sensitivity to, 96
Fertility of soil, ley farming and, 107 BR
Fertiliser distributors, N.I.A.E. test method, 37 (fig.)
Fertilisers, rates for crops for freezing, 81
requirements for crops of the U.A.R., 140
slow-release type, 139
technical developments in manufacturing, 138
trial and use on tea, Ceylon, 131, 132
use in American agriculture, 49 BR
Fibre, abaca, damage by diseases, 52 BR
sisal, Tanganyika industry 110 BR
wool fineness, 114
Fig, origin and antiquity of, 65
Fish meal, production in Peru, 4
unsuitable feed for bacon pig, 133
Flax, origin and domestication, 6
Fleece, types known to ancient world, 114
Flour quality, nitrogen fertilisers for wheat and, 75
Fly control by organophosphate compounds, 19(fig.), 165
Forage crops, 7, 30, 70
origin, dispersal and domestication, 6, 68
Food, frozen, crop growing for, 77
preservation by quick freezing, 76
quality and farming practice, 73
Food and Agricultural Organisation, scheme for conserving plant genotypes, 10
Food processing plant, planned cropping for, 79
Food supply, and nature conservation, 164
of the United Arab Republic, 140
surplus disposal, 3
Forest pathology, 112 BR
Forestry, tropical, 49 BR
Formosa, electricity consumption per head, 42
Formulation, of DDVP (Vapona), 18, 21
of dieldrin, 45
Fragaria spp., interspecific hybridisation, 65
France, electricity consumed in agriculture, 42
lucerne acreage, 172 BR
viticulture, red spider incidence, 134
Freedom-from-Hunger Campaign, finance, 165
Friesian cattle, influence on dairy breeds, 120, 121
Frost injury to legumes, 162
Frozen foods, crop growing for, 77
history of industry, 76
Fruit crops, origin and evolution of, 6, 64
Fruit picking, berry fruits, 78 (fig.)
Fungi, attacking lucerne, 172 BR
classed by dithiocarbamate sensitivity, 96
virus transmission by, 93
Fungicide, absorption mechanism of spores, 94
application methods for *Hevea*, 14 (figs.) 17
specificity of, 94, 96
systemic, subject reviewed, 97
Fungitoxicity and lipid-solubility, 96
Fungus diseases, of bananas, 52 BR
of forest species, 112 BR
of *Hevea* rubber, 14
of lucerne, 172 BR
of rice, 28

G

Genetics, and crop evolution, 9, 65, 122
lucerne, 172 BR
need to conserve genotypes, 10
selection of fruits and vegetables, 65
Germination, spore, fungicide concentration and, 95

Gezira, cotton growing in, 101, 103
Ghana, agricultural economy, 169 BR
cocoa capsid control, 25
swollen shoot control in cocoa, 90
Gibberella fujikuroi, 28
Glasshouse crops,
protection by DDVP, 22
Glomerella cingulata, 96
Glycine javanica, 164
Glyodin, mode of fungicidal action, 96
Goat, history of domestication, 55
Gossypium spp., ancestry and genetics of, 125
Grading beef bulls, Virginia, 155
Grape leaf roller, 135
Grapefruit, origin and evolution of, 65
Grass silage, feed for gestating sow, 151, 152
Grass species, agricultural properties, 110 BR
development as forage crops, 68
domestication of indigenous, 70, 71
improved strains, Aberystwyth, 107 BR
outcrossing and apomicts, 159
seed production, United Kingdom, 50 BR
tropical pasture plants, 158, 164
Grassland, legumes for tropical regions, 161
management, Stapledon's pioneer work, 107 BR
pasture husbandry, Australia, 48 BR
research fellowships, Stapledon memorial, 5
sown pastures, history and development of, 70, 71
tropical, breeding grass strains for, 158
Greece, lucerne growing, 30
Green manuring, rice yields and, 28
Grimm's lucerne hybrid, 8
Griseofulvin, specificity of fungicidal action, 96
Groundnut. *See* Peanut.
Growex method, 153
Guatemala grass-Spanish clover sward, 158 (fig.)
Guinea grass-legume pastures, Queensland, 164

H

Hail, damage to apply by, 35
Hammer mills, NIAE test scheme, 39
Harvesting, crops for freezing, 79 (fig.)
NIAE test for harvesters, 39
Hay, development of leguminous, 69
yield from lucerne varieties, Greece, 30, 31
Heat treatment of virus-infected stocks, 90, 92
Heat units system, calculation for plant growth, 79
Heifer, marks of beef-bull ancestry, 11, 13 (fig.)
Heliocopter, spraying rubber *(Hevea)*
canopy from, 15 (fig.)
Hellenic Agricultural Research Institute, 33 (fig.)
Hemileia vastatrix, 128
Herbage plants, origin and development of, 7, 70, 71
cross with dairy Friesian and progeny, 11, 13 (fig.)
world distribution, 121
Heterodera spp., lesser pests in tropics, 100
History, cattle breeds, 11, 13 (figs.), 120 (figs.)
cotton growing, 6, 125
evolution of temperate crops, 6, 65, 69, 122
frozen food industry, 76
goat domestication, 55
horse breeding, 57 (fig.) 58
pig breeds, 59
sheep husbandry, 114
tobacco growing, 125
tropical tree crops, 126
Homona coffearia, 132
Honey fungus, 122 BR
Hordeum spp., evolution of, 123
Hormones of insects, 86, 87
Horse, ancestry and domestication, 57 (fig.), 58
Horticulture, electricity in, 108 BR
nutrient removal by crops, 141
Host, nature of virus infection of, 89
Housefly, brain hormone studied, 87
control by DDVP, 21
toxicity of acethion to, 84
Hudeiba regional research station, Sudan, 103, 104
Humus, origin and role in soil, 109 BR
Hydrogen sulphide,
formation in rice soils, 27, 28
Hygiene in food storage, United States, 74

I

Iberian pig, evolution of, 61, 63 (fig.)
Implement, standard tests for, 38
India, crops attcked by nematodes, 100
electricity consumption per head, 42
rainfall of rubber-growing belt, 14
Indonesia, electricity consumption per head, 42
Industrial Pest Control Association (IPCA) 165
Insect pests, mechanics of control, 82
of lucerne, 172 BR
of tea, shot-hole borer, 132
of timber, biology and identification, 112 BR
Insecticides, advance in knowledge of action of, 82
assessed by canopy density, in cacao, 26
residual, and malaria eradication, 170 BR
resistance to, 84
resurgence of red spider mite and, 134, 137 (fig.)
testing by electro physiological techniques, 85
Vapona, physical properties, 18
virus vectors controlled by, 92
Insects, hormones of, 86, 87
olfactory and sex attractants, 87
Interplanting crops on tea estates, 133
Ireland, potato famine (1845-9) 109 BR
Iron requirement of piglets, 153
Irrigation, projects in Sudan, 103
tests for pumps, NIAE scheme, 39
world acreages under, 49 BR
Italian ryegrass, history of, 70

J

Japan, electricity consumption per head, 42
rice growing and fertilising, 27
Jersey cattle, ancestry of, 119
cross with Zebu bull, 121
Jute, nematode attack
in India and E.Pakistan, 100

K

Kelthane, 85
use against mites on tea, 132
Kenya, grassland research, 159
Kitale Grassland Research Station, 159
Kochia indica, 7
Kudzu as cover crop for sisal, 110 BR

L

Landrace pig breed, 61 (fig.), 149, 150
Large White pig breed, 60 (fig.), 149, 150
Lake, artificial, for fish culture, Sudan 146 (fig.)
Lasioderma serricorne, 22
Leptospheria salvinii, 28
Leaf curl virus of raspberry, 91 (fig.), 93
Leaf-fall in *Hevea* and losses, South India, 14
Leaf-roll virus of potato, aphid vector, 90, 91 (fig.)
Leaf spot (Sigatoka) of banana, 52 BR
Leguminous plants, acreage in United Arab Reb., 142
origin, dispersal and domestication, 6, 69
seed production, United Kingdom, 50 BR
species for tropical Australia, 161
Lentil, trade of the U.A.R., 140
Leptothyrium theae, 132
Leucaena glauca, 164
Ley farming, 107 BR
soil humus and, 110 BR
Liquid fertilisers, ammonia, 138
high-analysis phosphates in, 139
Livestock, breeding, 48 BR
carcass quality in, 75
history of domesticated, 6, 54, 59, 114, 119, 166 BR
live weight gain as inherited character, 155
performance testing, 151, 154
progeny testing, 12, 150, 155
Locust campaign, East African organisation, 45
Lodging of rice, 28 (fig.)
Lotononis bainesii, 162
Low-volume spraying, 169 BR
ground and aerial on rubber estates, 16
Lucerne, 172 BR
established in sub-tropics, 164
forage crop of ancient world, 7, 69
growing in Greece, 30
Luttrell Psalter, sheep type shown by, 114(fig.), 115
Lycopersicum esculentum var. *cerasiforme*, 65

M

Macrocentrus homonae, 132
Magnesium ammonium phosphate, slow-release fertiliser, 139
Magnesium deficiency, in tea, 133
Maize, ancestry and evolution, 123
nutrient removal from soil by crop, 141
Malaoxon, anticholinesterase properties, 84
Malaria eradication, 171 BR
WHO insecticide campaign, 170 BR
Malathion, metabolic fate in insect and mammal, 84
resurgence of red spider mite and, 134
Malaya, electricity consumption per head, 42
oil palm productivity, 129
Mammalian toxicity, of DDVP, 19
organophosphorus compounds and, 84
Meat, beef production, United Kingdom 11
flavour and juiciness of, 75
Mechanisation, of farming, electricity in, 44, 108 BR
of harvesting crops for freezing, 79 (fig.)
tractor for developing countries, 148 (fig.)
Meloidogyne spp., damage to carrot by, 99 (fig.)
in sugar beet, and control, 99 (fig.)
major field pest in tropics, 100
Merino sheep, ancestry, 56, 114
world distribution, 117
Meristem, virus-free plants grown from apical, 91(fig.),92
Methoxychlor, non-toxicity to mammal, 47 BR
Methyl parathion, red spider mite on vines and, 134
Mevinphos, 136
Migration of peoples and plant dispersal, 7
Milk, nutritional standard in Britain, 74
Millet, family-owned garden, 146 (fig.)
nutrient removal from soil by crop, 141
Mimosine, toxic principle in *Leucaena*, 164
Mineral oil (R.L.) as banana spray, 52 BR
Ministry of Agriculture, Fisheries and Food, 107 BR
Mist blower, for copper-in-oil concentrate, 16
trial against cocoa capsid, 26
Mites, attacking lucerne, 172 BR
resurgence on sprayed vines, France, 134
Moko disease of banana, 52 BR
Molasses grass *(Melinis minutiflora)*, 160
Monotractor, operations performed by, 148 (fig.)
Mörkeberg bacon pig, 62
Mosquito control, 170 BR, 171 BR
by DDVP, 20, 21
Moufflon as progenitor of Soay sheep, 56, 57 (fig.)
Mulberry, DDVP sprays non-toxic to silkworm, 22
Musa spp., hybridisation, 67
Mutation and evolution of crop plants, 65
Myzus persicae, 90, 91 (fig.)

N

National Institute of Agricultural Engineering, 36
Natural gas, ammonia production based on, 138
Nature Conservancy Conference, 164
Nematodes, crop, damage and losses from, 98
eelworm parasitic on tea, Ceylon, 132
soil and freshwater species, 171 BR
spear of *Xiphinema* sp., 99 (fig.)
virus transmission by, 91 (fig.), 93
Netherlands, pig breeds, 150
New South Wales, rain-making experiments, 34
Nicaragua, crops attacked by nematodes, 100
Nicotiana spp., evolution of, 125
Nigrospora musae, 52 BR
Nitrogen cycle, 168 BR
Nirogen deficiency, pastures of Queensland, 162

Nitrogen fertilisers, 167 BR
ammonia from novel sources, 138
equivalent supplied to soil by lucerne, 30, 32
for rice, danger of excessive dressings, 28
production and trade of United Arab Republic, 140
use on tea estates, Ceylon, 131, 133
yield response of cereals, Nile Delta, 142
Nitrogen fixation, by lucerne crop, 30, 32
by tropical legumes, 28,164
plant species effecting, 167 BR
Norway, pig breeds, 150
Nucleic acid, component of virus, 88

O

Oat, root system of, 110 BR
Off-flavour in animal products, 75
Oil palm, industry of Ghana, 169 BR
origin and domestication, 6, 129
Oïpidium brassicae, 93
Orange, colour and quality, 74
origin and evolution, 65
vitamin standard for juice, 74
Orchard fruits, interspecific hybridisation, 65
origin and domestication, 6, 64
Organic manures for rice, Japan, 28
Organisation for Economic Co-operation and Development, tractor test code, 37
Organoleptic testing, training panels for, 75
Organophosphorus insecticides, 18, 134, 165
anticholinesterase activity, 82
Oriental sheath spot of rice, 28
Oryza spp., evolution of, 123
Oscillograph of sensory disturbance caused by DDT, 85
Outcrossing grass species, 159
Ovicide, carbophenothion as, 137
Ovis orientalis, 56
Oxen, introduction of draft animals, 58

P

Pacey's ryegrass, 70
Paddy field, simulated, for tractor test 39 (fig.)
Pakistan, crops attacked by nematodes in, 100
electricity consumption per head, 42
Palm oil extraction, Malaya, 129
Panama disease of banana, 52 BR
Parathion, red spider mite on vines and, 134, 135, 136
Paronychus ulmi, 134, 135, 136
Pathogenesis in grass species, 159
Paspalum spp., 71
Pea, contract growing for freezing, 78, 81
origin, dispersal and domestication, 6
varieties for quick freezing, 77
Peach-potato aphid, virus vector, 90, 91 (fig.)
Peach yellows virus, 89
Peanut, acreage in United Arab Republic, 142
nutrient removal from soil by crop, 141
Peasant farming, Gezira training project, 146
Performance tests, on bacon pigs, 151
of beef bulls, Culpepper station, Virginia, 154
Pest control, 165, 169 BR
British conference proceedings, 165
Pest resistance, breeding crops for, 125
Pesticides, 169 BR
profitable use of, 111 BR
public health and, 46 BR
safety in use of, 165
Petroleum products, ammonia production based on, 138
Phaltan, fat solubility and fungicidal action, 96
Phaseolus atropurpurescens, 162
Phenylthiourea, systemic fungicidal action, 97
Philippines, crops susceptible to nematodes in, 100
Phloem necrosis virus of elm, 89
Phosdrin (Mevinphos), red spider mite on vines, and 136
Phosphate deficiency, soils of Greece, 33
Phosphate fertilisers, lucerne response, Greece, 32
manufacture from concentrated liquid P_2O_5, 139
production, requirements and trade, U.A.R., 140, 143
Phosphate rock, occurrence and mining, U.A.R., 143
Phosphoric acid, concentrated, from Florida Rock, 139
Phosphorothioates, metabolic activation in insect tissues, 83
Phosphorus requirements of bacon pigs, 152
Phytophthora palmivora, 14, 16
Phytotoxicity of mildew fungicides, 96
Pick-up baler, N.I.A.E. test scheme for, 39
Piglet, early weaning and feeding, 152
Pigmeat, all-purpose pig for, 63
Pigs, breeding, 63, 149, 150
evolutionary history, 56, 59
husbandry and marketing, 52 BR
rations for bacon pigs, 152
testing station, Mörkeberg's, Denmark, 62
Pink disease of rubber *(Hevea)*, 14
Piricularia oryzae, 28
Plant, growing under artificial light, 43 (fig.)
Plant communities and soil type, 168 BR
Plant nutrition, nitrogen metabolism, 167 BR
nutrients removed from soil by crops, 141
toxicity of systemic fungicides and, 97
Plantain, diseases of, 51 BR
Plum, hybridisation and chrosome number, 67
Pod rot of rubber, 14
Polycross arrangment for breeding grasses, 159
Polygenes, concentration in modern tomato, 65
Polyphosphates, manufacture, 139
Polyploidy in plants, origin of, 67
Population growth in the United Arab Republic, 141
Poria hypolateritia, 132
Portugal, crops susceptible to nematodes, 100
Potash deficiency, tea plant, 133
Potassium fertilisers for rice, 28
Potassium metaphosphate production, 139
Potassium salts, recovery from sea water, 139
Potato, cooking quality, 75
nutrient removal from soil by crop, 141
potash effect on chip quality, 75
progenitors and evolution, 66(fig.), 67
virus-free seed, 90, 92
Potato blight, annual losses in Britain, 111 BR
in the great famine, 109 BR
Poultry, diseases of, 113 BR
egg colour and shell thickness, 74

Powdery mildew, control by procaine, 96
fungicidal specificity and, 94, 96
Pratylenchus loosi, 132
Priesère defined, 168 BR
Procaine as systemic fungicide, 96
Progeny test, of bulls, 12, 155
of pigs, 150
Propagation, virus transmission by vegetative, 89
Protein, and amino-acid synthesis, 168 BR
component of viruses, 88
content of *Leucaena glauca* leaf, 164
supplements for bacon pigs, 152
Pruning cycle for tea, 133
Prunus spp., hybrids and chromosome numbers, 67
Psedomonas oryzae, 28
Public health, DDVP in field of, 21
pesticides and, 46 BR
Pueraria phaseoloides, 110 BR
Pumping set, electric, in Madras state, 43 (fig.)

Q

Quarantine, plant, importance of, 112 BR
Quick freezing methods, development of, 76

R

Radopholus similis, 52 BR
Rainfall, Australian tropics, 162
experiments in controlled release, 34
Kerala State, India. 14
Ramland Research Station, Central, in Sudan, 102
Rape, progenitors and evolution of, 67
Raspberry leaf-curl virus, nemtaode-transmitted, 91, 93
Rat control, 165
Rations, for beef bulls, 157
for finishing bacon pigs, 153
for piglets, early weaned, 153
for pregnant sows, 151, 152
Ratoon stunting in sugar cane, 92
Red root disease if tea, 132
Red spider mite, population on sprayed vines, 134
Refrigeration, and bacon curing methods, 62
history of frozen foods, 76
Reindeer, early herding methods, 56
Rhizobium, Transvaal strain in Queensland, 162
Rhodes grass, response to nitrogen fertiliser, 162
sward with Spanish clover, 158 (fig.), 159
Ribose nucleic acid, 88
Rice, bibliography of, 113 BR
fertilising, soil factors discussed, 27
green manuring and yields, Madras, 28
nematode attack, East Pakistan, 100
nutrient removal from soil by crop, 141
progenitors and domestication, 123
yield in the United Arab Republic, 140
Rice blast, 28
Ridley, H.N. and rubber growing, 128, 129 (fig.)
Rodent control, 165
Root crops, development as forage crops, 70
Root-knot nematode, 97, 99 (fig.), 100
Root-rot of forest species, 112 BR
Roots systems of cereals, 110 BR
Rotation of crops, United Arab Republic, 142
Rubber *(Hevea)*, domestication of, 128
Phytophthora control, South India, 14, 16
Rubber industry of Ghana, 169 BR
Rugose mosaic of potato, 90, 91 (fig.)
Rural electrification, 41
Rye, origin, dispersal and domestication, 6
root system, 110 BR
Ryegrass, history of development of, 70
Ryeland short-wool sheep, 115

S

Sahlbergella singularis, 23 (fig.)
Saint Coombs tea factory and estate, 130 (fig.)
Samford Research Station, pasture productivity at, 164
Santa Gertrudis breed, 121
Screening chemicals, insect-injection technique, 86 (fig.)
Screw worm fly, control by male sterilisation, 86
Seed, certification for virus-free crops, 90
identification, crops and weeds, 50 BR
treatment, 169 BR
Seed drills, N.I.A.E. test scheme, 39
Seed production, herbage species, 50 BR
lucerne, Greece, 30, 32
Seedlessness, in fruits, origin of, 66
Self-fertilisation of crop progenitors, 6
Sensory perception in insect, disturbed by DDT, 85 (fig.)
Setaria grass-white clover sward, 158 (fig.)
Sevin, red spider on vines sprayed with, 134, 135, 136
Shade, *Leucaena glauca* as browse tree, 164
tea planting under, Ceylon, 132 (fig.)
Shambat experimental farm, Sudan, 104
Sheep, evolution of domestic breeds, 114, 115
history of domestication, 55, 56, 57 (fig.)
husbandry in the Middle Ages, 115
Shell Italiana, Borgo a Mozzano experiment, 170 BR
Shelter belts, 49 BR
Shorthorn cattle, ancestry, 120
world distribution, 121
Shot-hole borer of tea, 132
Shrubs, diseases of, 112 BR
Sierra Leone, capsid damage to cocoa, 23
Sigatoka disease of banana, 52 BR
Silica in nutrition of rice plant, 28
Silviculture, tropical practice, 50 BR
Siratro, hybrid legume, rainfall range, 163 (fig.)
Sisal, 110 BR
Hybrid No. 11648, 111 BR
Sisal Experimental Station, Tanga, 110 BR
Sisal weevil, control by dieldrin, 110 BR
Skim milk in rations of sows and piglets, 152, 153
Smooth brome grass, development in U.S.A. 70
Soay sheep, crossbred, 115
survival of the breed, 56, 57
Soil, conservation and erosion, 49 BR
exhaustion by rotations used in the U.A.R. 142
organic matter of, 109 BR, 142

vegetation types and soil types, 168 BR
Sorghum vulgare, evolution of, 123
Sonenberg feed lot, Colorado, 154 (fig.)
South American leaf blight, 14, 128
South India, *Phytophthora* on *Hevea* in, 14
Sow, feeding of pregnant, 151, 152
Soybean meal, production of, 4
Spacing of sisal, Tanganyika, 110 BR
Spanish clover, 158 (fig.)
Spear grass grown with Townsville lucerne, 162 (fig.)
Species, Vavilov's centres of origin of, 6
Spinach, fertilisers for crops for freezing, 81
mechanical harvester for, 79 (fig.)
Spore, fungicide concentrations to inhibit germination, 94
Spraying, concentrate spray, 169 BR
crops with mineral oil (R.L.), 52 BR
equipment for, 169 BR
farm crops, economics of, 111 BR
Spraying machines, 26
pneumatic and rotary for R.L., 52 BR
power sprayers, Ashplant's early design, 15
test requirements for, 37
Sprouting broccoli, grown for freezing, 80 (fig.)
Squirter disease of banana, 52 BR
Standard tests, B.S. and O.E.C.D. codes for tractors, 37
Stapledon, Sir George, biography, 106 BR
Memorial Trust, 5
Steer calf, early weaning and rearing, 12
Stem canker of forest species, 112 BR
Stem spot disease of rice, 28
Sterilisation, radiation, of male insects, 86
Sterility, chemicals for inducing, in plants, 86
seedlessness in fruits and, 66
Stored products, pest control by DDVP, 22
Strawberry, interspecific hybridisation, 65
varieties for quick freezing, 78
Stylosanthes sundaica, 162, 164
Subterranean clover, introduction into Australia, 70
Sudan, agricultural research in, 101, 103, 104
Gezira farming project, 144
Sugar beet, nematode damage and control, 99 (fig.)
spraying to control virus-yellows vector, 92, 93
Sugar cane, development schemes, Sudan, 103
dispersal by early trade routes, 8
nematode attack, Philippines, 100
nutrient removal from soil by crop, 141
virus diseases and control, 92
Sumerian era, barley growing in, 122
Superphosphate, consumption and production, U.A.R., 143
manufacture from superphosphoric acid, 139
yield response of lucerne, Greece, 32 (figs.)
Superphosphoric acid, manufacture, 139
Sus spp., progenitors of the pig, 56
Sweden, frozen food industry, 76
pig breeds of, 150
Sweet corn, fertilisers for crops for freezing, 81
Swine Breeding Station, Regional, Iowa, 63
Swollen shoot of cacao, 89

T

Tanganyika, sisal industry, 110 BR
Tanker for ammonia transport, 138
Tarpan, progenitor of the horse, 57 (fig.)
Taste, food grading for, 75, 175
Tea, clones, TRI series, 133
grading for taste, 175
origin and distribution, 128
plucking, Ceylon, 130 (fig.)
soluble powder (CeyTea), 133
taster at work, 72 (fig.)
yield potential for nitrogen fertiliser, 133
Tea Research Institute of Ceylon, 130 (figs.), 131
Tea tortrix, damage to leaf by, 132
Technical assistance centre, Italy, 170 BR
Temperature limits for tropical legumes, 162
Tennessee Valley Authority, phosphate developments, 139
Terminalia bush, planting to food crops, 146
Tetraethylpyrophosphate, cuticle penetrated by, 83
Tetranychus spp., 134
Thailand, electricity consumption per head, 42
Thiouracil, inhibiting effect on virus infection, 89
Thiram, fungus sensitivity to, 96
Timber, insect pests of, 113 BR
preservation of, 112 BR
Tobacco, ancestry of, 124
nematode attack, Colombia, 100
warehouse disinfestation by DDVP, 20
Tomato, origin and evolution by selection, 65
Torea hand weeder, 146 (fig.)
Townsville lucerne as pasture legume, 162, 164
Tozi Research Station, Sudan, 103
Tractor, agricultural, for developing countries, 148
testing in Britain, 37
Trade routes, crop movement along ancient, 7
Training, agricultural, and student settlement, Sudan, 145
Tree crops, breeding of tropical species, 127
diseases of, 111 BR
Trichinosis, and early ban on pig-keeping, 59
Trifolium alexandrinum, 142
Tripsacum laxim, 158
Tristeza of citrus, 89
Triticum spp., evolution of, 6, 123, 124 (figs.)
Tropical tree crops, domestication, 127
Tropics, breeding grass species for, 159
cattle breeds of, 121
forestry in, 49 BR
Tunisia, crops attacked by nematodes in, 100
Turf, weed control in, 169 BR
Turkey, electricity consumption per head in, 42
Twig dieback in *Hevea*, 14
Typhlodromae spp., 135, 136

U

Uda sheep, 114, 117 (fig.)
Undukori Training Farm, Sudan, 146

United Arab Republic, fertiliser needs of, 140
nitrogen fertiliser factories in, 142
soil exhaustion in, 142
United Kingdom, cattle breeds, 11,13 (fig.), 120 (fig.)
electricity consumption, 42
frozen food industry, 76
pesticide control, 46 BR
pig breeds, 149
ryegrass history, 70
sheep husbandry, history of, 115
United States, electricity consumption, 42
forage grass development in, 70
frozen food industry, 76
lucerne acreage, 172 BR
pesticide standards and toxicity tests, 46 BR
soil management, 49 BR
surplus food disposal, 3
Swine Breeding Laboratory, Ames, Iowa, 63
United States Department of Agriculture, 4
New Crops Research Branch, 70
New Plant Introduction Section, 10
use of DDVP approved by, 22
United States Food and Drug Administarion, 46 BR, 47 BR
Urea-formaldehyde polymer, fertiliser use, 139
Urial sheep, 56, 57 (fig.)
Uromyces phaseoli, 97
USSR, lucerne acreage, 172 BR
plant introduction service, 10
soil types of, 109 BR, 110 BR

V

Vapona, 18
spray application in milking shed, 19 (fig.)
Vavilov, N.I. centres of plant origins, 6, 8 (map)
Vegetables, growing crops for freezing, 77, 78, 80
interspecific hybridisation, 65
origin and development of, 64
Vegetation and soils, 168 BR
Vine, interspecific hybridisation, 65
Virus, soil-borne, fungus vector identified, 93
transmission by nematode, 91 (fig.)
Virus diseases, of plants, 88, 89, 93
of poultry, 113 BR
Virus-free lines of horticultural crops, 90
Vitamin requirements of pigs, 152

W

Wad Medani Research Station, 101, 103
Water-melon, 51 BR
Weaning, early, of beef calves, 12
of piglets at three weeks, 152
Weed control, 48 BR
in crops for freezing, 81
Weeding implement, the *torea*, 146 (fig.)
Weeds, lucerne-land species, 172 BR
seed identification, 50 BR
species controlled by herbicides, 169 BR
Wells, Oris V.,
F.A.O. appointment, 147
Welsh Plant Breeding Station, 71
West Africa, tropical forestry, 49 BR
West Germany, electricity consumption, 42
pig breeds, 150
Wheat, ancestry, origin and domestication of, 6,122,123
milling quality, 75
mosaic virus, soil-borne, 93
nutrients removed from soil by crop, 141
root system of, 110 BR
trade of the United Arab Republic, 140
Wickham, Sir Henry,
rubber seed collection, 128
Wiltshire bacon, origin of, 62
Wood, decay, insect factor in, 112 BR
pest infestation, Great Britain, 165
preservation, 112 BR
Wool, records of
use in ancient world, 114
World Health Organisation, 165
malaria eradication campaign, 170 BR
Wright, Sir N.,
British Association appointment, 147

X

Xiphinema diversicaudatum, 91 (fig.), 99 (fig.)
Xyleborus fornicatus, 132

Y

Yambio Research Station, Sudan, 103
Yellow spider mite on vines, 135
Yellow virus of peach, 89
Yorkshire (Large White) pig breed, 60 (fig.)
Young farmers, Gezira training scheme, 144

Z

Zandi scheme, Sudan, 102
Zebu cattle, origin and domestication of, 58

Shell Chemicals
SHELL